CLAIMS

What is claimed is:

1.   A method for generating a parts catalog consisting of a parts list and corresponding disassembly illustrations, comprising the steps of

5   (a) assigning a reference numeral/symbol based on the parts list, to each of parts groups belonging to an initial process of disassembly, and to each of parts groups belonging to an intermediate process of disassembly, respectively;

        (b) building a disassembly algorithm based on said parts list; and

        (c) generating disassembly illustrations based on said disassembly algorithm, wherein

10   minimum disassembly units of the disassembly illustrations are parts and parts groups assigned with said reference numeral/symbols, and displaying said reference numeral/symbol for each of the parts and parts groups in the disassembly illustrations.

2.   The method of Claim 1, wherein each of the parts groups is an assembly

15   consisting of one or more parts.

3.   The method of Claim 1, wherein the parts list includes definition information of dependency relationships among parts and group relationships among groups, and comprises a tree structure consisting of nodes and leaves, which are processes and parts,

20   respectively, wherein each of the nodes comprises a basic process and an intermediate process performed in said basic process, and wherein each of the leaves consists of a process parts group for grouping a plurality of parts or parts groups, and said parts or parts groups.

25   4.   The method of Claim 1, wherein said step (b) generates the disassembly algorithm by adding to the parts list, a moving coordinate system of said basic process and said intermediate process, and a respective moving position of the parts or parts groups and

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the process parts group along said moving coordinate system, that are determined based on said parts list.

5. The method of Claim 4, wherein in said step (b), as for the moving coordinate

5 system the coordinate system of a part or parts group that forms the base of the basic process is selected as the coordinate system of the basic process or the intermediate process.

6. The method of Claim 4, wherein in said step (b), a shape of each of the parts or

10 parts groups is approximated with a circumscribing polygon thereof, and the moving position is set such that each polygon is at a minimum distance from each other which is greater than a predetermined ratio.

7. The method of Claim 1, further comprising the step of (d) modifying the

15 disassembly algorithm and illustrations after generating the disassembly illustrations.

8. The method of Claim 7, wherein said step (d) modifies each of the disassembly illustrations by modifying a position, a bearing or a scale of each of the parts or parts groups for each of the basic process, the intermediate processes and connecting processes

20 connecting the basic and intermediate processes, wherein the basic, intermediate and connecting processes constitute the disassembly definition information.

9. The method of Claim 8, wherein said step (d) generates and presents a user interface for modifying the position, bearing or scale for each of the parts or parts groups.

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10. The method of Claim 8, wherein said step (d) permits modification of a camera view point information to modify the disassembly illustration.

11.   The method of Claim 8, wherein said step (d) modifies the disassembly
illustration by determining an interference among the parts or parts groups during the
movements thereof for each of the basic, intermediate and the connecting processes,
5   wherein the basic, intermediate and connecting processes constitute the disassembly
definition information, and by modifying the position, bearing or scale for each of the
parts or parts groups in the processes.

12.   The method of Claim 11, wherein said interference among the parts or parts
10   groups during the movements thereof is determined by calculating the interference among
respective polygons circumscribed around each of the parts or parts groups.

13.   The method of Claim 1, wherein

said step (c) comprises the step of drawing a lead line from each of parts and parts
15   groups within the disassembly illustration in order to display said reference
numeral/symbol, wherein

said step of drawing a lead line projects a movement vector from a pre-
disassembly position to a post-disassembly position for said parts and parts groups, onto a
plane perpendicular to a view point vector from a view point, and draws said lead line for
20   said reference numeral/symbol from a post-movement object along an axis direction of a
shorter component of analyzed vector components constituting such a projected vector.

14.   A computer software program for generating a parts catalog consisting of a parts
list and corresponding disassembly illustrations in a computer system, comprising:

25   a storage medium;

an instruction means stored in said storage medium for instructing said computer
system to assign a reference numeral/symbol based on the parts list, to each of parts

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groups belonging to an initial process of disassembly, and to each of parts groups belonging to an intermediate process of disassembly, respectively;

an instruction means stored in said storage medium for instructing said computer system to build a disassembly algorithm based on the parts list; and

5 an instruction means stored in said storage medium for instructing said computer system to generate disassembly illustrations based on the disassembly algorithm, wherein minimum disassembly units of the disassembly illustrations are parts and parts groups assigned with the reference numeral/symbols, and displaying the reference numeral/symbol for each of the parts and parts groups in the disassembly illustrations.

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15. A system for generating a parts catalog consisting of a parts list and corresponding disassembly illustrations, comprising:

means for assigning a reference numeral/symbol based on the parts list, to each of parts groups belonging to an initial process of disassembly, and to each of parts groups

15 belonging to an intermediate process of disassembly, respectively;

means for building a disassembly algorithm based on the parts list; and

means for generating disassembly illustrations based on the disassembly algorithm, wherein minimum disassembly units of the disassembly illustrations are parts and parts groups assigned with the reference numeral/symbols, and displaying the reference

20 numeral/symbol for each of the parts and parts groups in the disassembly illustrations.